

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD L. BONIN

Appeal No. 1998-2947
Application No. 08/682,876

ON BRIEF

Before HAIRSTON, KRASS, and JERRY SMITH, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-9 and 11.
Claim 10 has been indicated by the examiner as being directed to allowable
subject matter and is no longer on appeal before us.

The invention is directed to a roller-type motor wherein the moving part, or motor of the motor rolls on the inside of the stator such that the motion is like a barrel rolling inside of another barrel. The motor is used in high-torque, low revolutions applications.

Independent claim 1 is reproduced as follows:

1. A roller-type electric motor, comprising:

a housing having a hollow interior and an inner wall;

a plurality of stator poles each of predetermined electrical polarity and positioned at said inner wall of said housing;

a roller having an outer surface and positioned for rolling movement within said hollow interior of said housing,

a plurality of roller poles each of predetermined magnetic polarity and positioned on said outer surface of said roller, a first one of said roller poles having a magnetic polarity opposite the magnetic polarity of a first one of said stator poles so that said first roller pole is drawn through magnetic action into contact with said first stator pole; and

control means for reversing the magnetic polarity of said first stator pole
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The examiner relies on the following references:

Welch	3,452,227	Jun. 24, 1969
Rosain et al. (Rosain)	4,329,607	May 11, 1982
Kawai	5,030,866	Jul. 09,
1991		
Jacobsen et al. (Jacobsen)	5,252,870	Oct. 12, 1993
Burgbacher et al. (Burgbacher)	5,331,245	Jul. 19, 1994
Satake et al. (Satake)	5,545,943	Aug. 13, 1996

Claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by Welch.

Claims 2-9 and 11 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner cites Welch and Jacobsen with regard to claims 2 and 11, adding Burgbacher to this combination with regard to claims 3 and 4 and further adding Kawai with regard to claim 5. With regard to claims 6-8, the examiner cites Welch and Satake, adding Rosain to this combination with regard to claim 9.

Reference is made to the brief and answer for the respective positions of appellant and the examiner.

OPINION

We affirm.

We turn first to independent claim 1. We agree with the examiner that Welch discloses all that is claimed, including the housing, a plurality of stator

poles, a roller, a plurality of roller poles positioned as claimed, and a control means for reversing magnetic polarity of the stator poles, as claimed.

Appellant contends that there are Amajor differences between the device of subject invention and that of Welch [brief-page 5].

First, appellant contends that Figure 2 of Welch shows a geared output shaft, an internally and externally geared roller and an internally geared stator whereas the instant claimed invention has no gearing and that claim 1 now positively recites the absence of gear teeth which is different from Welch's teachings [brief-page 6].

As the examiner points out [answer-page 4], instant claim 1 contains no recitation of the absence of gear teeth because the amendment after final was refused entry. Accordingly, appellant's argument in this regard is not persuasive since it is based on limitations which do not appear in the claim. Moreover, as the examiner again points out, Welch teaches the use of gear teeth to be a preference but clearly recognizes that an embodiment having no gear teeth may be used. See

Figures 3-5 and column 3, lines 35-56 of Welch.

Appellant also argues that there is an air gap between the stator and roller in the instant invention that remains constant for all poles regardless of roller location and that this is a principal feature of the instant invention which

allows for high torque and high power density. Appellant points out that Welch does not describe the use of repelling forces to increase torque or efficiency and that Welch has a variable air gap which would preclude realizing the benefits of utilizing the repulsive forces [brief-page 6].

Whether or not appellant's allegations are true, the argument is again unpersuasive because it is based on limitations not appearing in claim 1. The claim recites nothing about an air gap, constant or otherwise.

Finally, appellant argues that Welch is designed to be used as a stepper motor and is not concerned with the eccentric forces generated by a single offset roller if driven to provide steady state output revolutions whereas the instant invention is Aintended to supply steady state output revolutions [brief-page 7]. Once again, appellant presents an argument directed to limitations which do not appear in the claim. Accordingly, since all of appellant's arguments regarding independent claim 1 are directed to limitations not appearing in the claim, the

arguments are not persuasive and do not overcome the prima facie case of anticipation established by the examiner.

The examiner's rejection of claim 1 under 35 U.S.C. ' 102(b) is sustained.

With regard to claim 2, the examiner relies on the teaching of Jacobsen, at column 5, to provide for the suggestion of a push-pull movement provided by

magnetic fields. The examiner then combines this with the teaching of Welch in order to improve efficiency and increase torque.

Appellant's response is to argue that Jacobsen fails to consider the effect of large air gaps while appellant relies on the large forces developed by small gap solenoids and provides a mechanism to efficiently realize the potential afforded by the repelling forces [brief-page 8]. However, appellant fails to point to any particular structure in the instant claims on which he relies and it appears that appellant is again arguing limitations which do not appear in the claims.

Accordingly, we will sustain the examiner's rejection of claim 2 under 35 U.S.C. § 103.

Claim 3 adds the limitation that the number of stator poles is one more than the number of rotor poles. While recognizing that the combination of Welch and Jacobsen does not provide for this limitation, the examiner notes that Welch suggests that the revolutions of the output shaft are dependent on the relative diameters of the stator, rotor and output shaft ring and that these parameters could then be varied to produce the required output to match with the number of stator poles. However, since Burgbacher teaches, at column 2, lines 36-45, that the number of stator poles should be one greater than the number of rotor poles in order to reduce torque fluctuations, the examiner held it

to be obvious, within the meaning of 35 U.S.C. § 103, to have applied Burgbacher's teaching to the combination of Welch and Jacobsen.

Appellant argues that the limitation of claim 3 determines the speed of rotation of one of the output shafts not the difference in diameter as in the abstract teaching of Welch [brief-page 9]. The arguments are based on increasing differences in the number of poles versus changing diameters. It is not clear what specific claim limitations appellant is relying on in making this argument and it appears that, once again, appellant argues limitations not appearing in the claims.

Appellant also argues that Burgbacher teaches that the additional pole is for reducing torque fluctuations rather than for developing rotation as does appellant's device. If a reference suggests the limitation set forth in appellant's claim, it does not matter that the reference makes the suggestion for a reason different from that of appellant. If the suggestion for the modification is clear in the prior art, and we find no argument by appellant that Burgbacher does not suggest the limitation in question, then the reason as to why the prior art suggests the modification appears to be irrelevant.

We will sustain the examiner's rejection of claim 3, and of claim 4, which falls with claim 3, under 35 U.S.C. § 103.

With regard to claim 5, the examiner brings in the reference to Kawai for the teaching that [g]enerally, the greater the number of electromagnets, the smoother the turning movement of the motor [Kawai, column 2, lines 36-38]. The examiner then uses this teaching to hold that the use of twelve roller poles and thirteen stator poles would have been obvious, in view of Kawai's teaching taken together with Welch, Jacobsen and Burgbacher. In our view, the examiner has made out a prima facie case of obviousness.

Appellant argues only that the instant invention is materially and substantially different than the discoveries of Welch, Jacobsen and Burgbacher [brief-page 11] and proceeds to discuss diameters not being varied to produce the required output to match the stator poles. Appellant's argument clearly fails to overcome the prima facie case of obviousness established by the examiner with regard to claim 5. Accordingly, we will sustain the examiner's rejection of claim 5 under 35 U.S.C. '103.

With regard to claims 6 and 7, the examiner combines Satake's plurality of roller poles arranged around the cylindrical outer surface of the roller so that the poles alternate in polarity (citing Satake's Figure 12) with the roller-type motor of Welch.

Appellant argues that Satake's arrangement is typical of a conventional rotating machine [brief-page 12] and that the instant device is totally different

from that depicted by FIG. 12 of Satake, arguing that the stator poles of the instant device have surface areas which extend beyond the cylindrical edge of the roller@ and that the air gap in the submittal design is axial to the roller [brief-page 12]. We agree with the examiner that the argued surface areas extending beyond the cylindrical edge and the air gap being axial to the roller are not limitations of the claimed subject matter and therefore, these arguments are not persuasive.

Accordingly, we will sustain the examiner's rejection of claims 6 and 7 under 35 U.S.C. § 103.

At pages 12-13 of the brief, appellant sets forth the examiner's reasoning with regard to the rejection of instant claim 8 but makes no argument as to perceived errors in the examiner's reasoning. Accordingly, we will also sustain the examiner's rejection of claim 8 under 35 U.S.C. § 103.

With regard to claims 9 and 11, appellant makes no argument as to the merits of the examiner's rejection, noting only that they are dependent claims Awhich incorporate the elements of the earlier claims [brief-page 14]. Accordingly, these claims will fall with the claims from which they depend.

The examiner's decision rejecting claim 1 under 35 U.S.C. ' 102(b) and claims 2-9 and 11 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR ' 1.136(a).

AFFIRMED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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